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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/726,068 | 12/03/2003 | Akifumi Yamaguchi | 925-275 | 2558 |
| 23117 | 7590 | 07/13/2005 | EXAMINER | |
| NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203 | | | KO, TONY | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2878 | |
| DATE MAILED: 07/13/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

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|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/726,068 | Applicant(s) YAMAGUCHI ET AL. | |
| | Examiner Tony Ko | Art Unit 2878 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 12-29 is/are rejected.
- 7) ☒ Claim(s) 6-11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12/03/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 12-27 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a "process" nor a "machine", but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 12-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Note: A single claim which claims both an apparatus and the process of using the apparatus is indefinite under 35 U.S.C 112, second paragraph, Ex parte Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Popil (U.S. Patent 5,162,660).

3. Regarding claims 1 and 5, Popil discloses (Figs. 1-3) an optical object identification apparatus, comprising: at least one light emitting side optical system that includes a light emitting device (22) and objective lens (26) that irradiates light from the light emitting device to a moving target (10) object and forms a light spot on the target object; at least one light receiving side optical system that includes a light receiving lens (28) and a light receiving device (36), and that outputs an output signal having a waveform corresponding to surface projections and depressions of the target object when reflected light from the light spot enters the light receiving device. That is, the device determines the roughness or smoothness of the surface base on the waveform of the signal. Popil also discloses a signal processing section (42, 44, and 46) that executes signal processing of the output signal outputted from the light receiving-side optical system. Popil also discloses the light emitted from the light emitting device is polarized light whose direction of polarization is vertical or parallel to a plane of incidence.

4. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Allen (U.S. Patent 6,291,829).

5. Regarding claim 1, Allen discloses (Figs. 1-4) an optical identification apparatus, comprising: at least one light emitting-side optical system that includes a light emitting device and an objective lens (13), and that irradiates light from the light emitting device to a moving target (10) and forms a light spot on the target object; at least one light receiving side optical system that includes a light receiving lens (20) and a light receiving device (22), and that outputs an output signal having a waveform corresponding to surface projections and depressions of the target object when reflected light from the light spot enters the light receiving device; and a signal processing section (42) that executes signal processing of the output signal outputted from the light receiving side optical system. Allen also discloses the light emitting device is a semiconductor laser (Col. 5, Lines 52 – 60). Allen also discloses a pair (12 and 14) of the one light emitting side optical system and the one light receiving side optical system (2 of the detectors in 22), wherein an optical axis of the light emitting side optical system (12) and an optical axis of the light receiving side optical system are vertical to a light spot formation face on the target object. Allen also discloses the optical object identification apparatus comprising: one light emitting side optical system (14); and two light receiving side optical systems, wherein an angle between an optical axis of one of the two light receiving side optical systems and a light spot formation face of the target object is equal to an angle between an optical axis of the light emitting side optical system and the light spot formation face of the target object. Allen also discloses

a printing apparatus incorporating the optical object identification apparatus. Allen also discloses a beam splitter in the light receiving side optical system for letting the reflected light from the light spot come incident to each of the two light receiving devices.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Allen in view of Hagiwara (U.S. Patent 5,736,735).

8. Regarding claim 5, Allen discloses the invention set forth above. Allen does not disclose the light emitted from the light emitting device is polarized light whose direction of polarization is vertical or parallel to a plane of incidence. Hagiwara discloses the light emitted from the light-emitting device is polarized light whose direction of polarization is vertical or parallel to a plane of incidence (claim 2). It would have been obvious to a person of ordinary skill in the art at the time of the invention to have the light emitted from the light emitting device is polarized light whose direction of polarization is vertical or parallel to a plane of incidence to adjust the scattered light to have a given cross section for observing scattered light.

9. Claim 29 is rejected under U.S.C. 103(a) as being unpatentable over Allen.

10. Regarding claim 29, Allen discloses the invention set forth above. Allen does not disclose to use the optical object in an identification apparatus. It is well known to use the optical object identification apparatus in an identification apparatus. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the optical object identification apparatus in an identification apparatus to achieve compact design.

Allowable Subject Matter

11. Claims 6 – 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: Prior art discloses the invention set forth above. Prior art does not disclose polarization means disposed immediately before one of the light receiving devices in the light receiving side optical system for passing polarized light having a direction of polarization that is orthogonal to the direction of polarization of the light emitted from the light emitting device. Prior art does not disclose a diffraction grating provided in the light receiving-side optical system and designed such that intensity of zero order diffraction light is sufficiently smaller than intensity of first order diffraction light.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Ko whose telephone number is 571-272-1926.

The examiner can normally be reached on Monday-Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TKO


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